

# THE CRUSHED STONE JOURNAL

*Official Publication*  
The National Crushed Stone Association

## *In This Issue—*

Marquette Cement Manufacturing Co.  
Wins Safety Trophy

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Quarrying a Perfect Safety Record

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Even the Big Can't Stand Alone

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Joint Committee Makes Recommendations  
on Cleaning and Repairing Cars

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Crushed Stone Production for  
1928 Shows Decrease

**AUGUST, 1929**

# WHY HAVE LOSSES

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Selway Process Company	Syracuse, N. Y.	Whiterock Quarries	Pleasant Gap, Pa.
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Rock-Cut Stone Company	Ballins, Madison Co., N. Y.	New Haven Trap Rock Company	New Haven, Conn.
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Rock-Cut Stone Company	Lacena, N. Y.	John S. Lane and Son	Westfield, Mass.
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Wagner Quarries	Castalia, Ohio	Granite Rock Company	Logan, Calif.
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National Lime & Stone Co.	Lewisburg, Ohio	James Stone Company	Corsicana, Texas
National Lime & Stone Co.	Bluffton, Ohio	Franklin Limestone Company	Nashville, Tenn.
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Higgins Stone Company	Bellevue, Ohio	John H. Wilson	Honolulu, Hawaii
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Lake Erie Limestone Company	Lowellville, Ohio		
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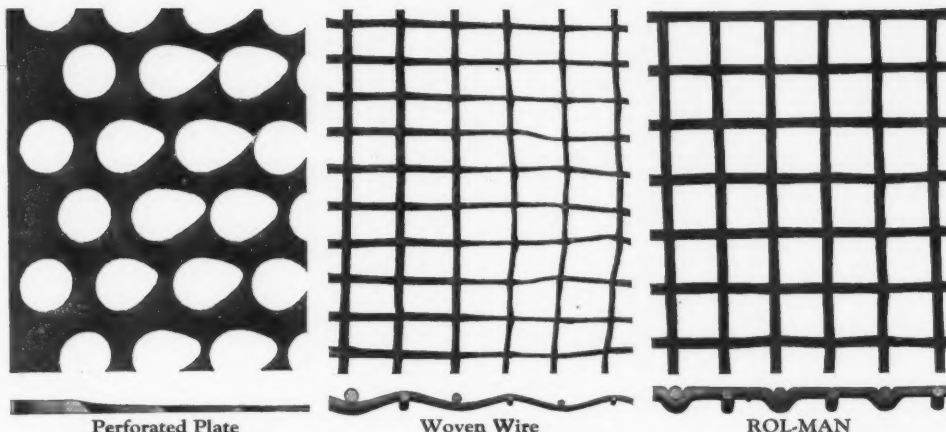
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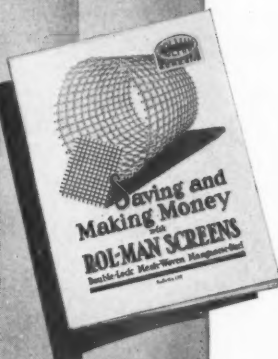
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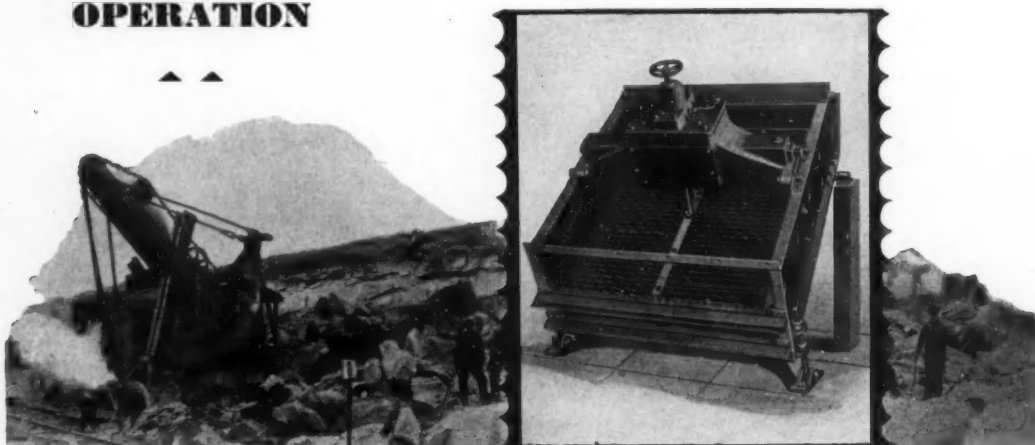
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# The CRUSHED STONE JOURNAL

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August, 1929

## Marquette Cement Manufacturing Company's Cape Girardeau Plant Wins 1928 Safety Competition

*Four Other Quarries Complete Year With No Lost-time Accidents.*

**T**HE Cape Girardeau Limestone Quarry of the Marquette Cement Manufacturing Company enjoys the distinction of having won first place in the National Crushed Stone Association Safety Competition for 1928 held among members of the Association entered in the National Safety Competition, according to Mr. W. W. Adams of the United States Bureau of Mines who acts as judge in the contest. During 1928 five members of the Association entering the National Contest operated plants throughout the year with no lost-time accidents. Under such circumstances the Bureau of Mines in accordance with the rules of the contest rates the plants making perfect records in the order of their respective total man-hours of exposure. On that basis the Cape Girardeau Plant was designated winner of the contest with a total number of man-hours of exposure of 212,921.

### Honorable Mentions

First honorable mention is accorded the Trap Rock Quarry at Birdsboro, Pennsylvania, operated by the

John T. Dyer Quarry Company which had a total exposure of 166,768 man-hours.

To the Louisville Cement-Rock Quarry at Speed, Indiana, there is given second honorable mention. This quarry operated by the Louisville Cement Company completed the year with a total exposure of 133,769 man-hours. Attention should be called to the fact that each year since the inauguration of the contest in 1926, this quarry has finished among the winners, having obtained first place in 1926, first honorable mention in 1927 and second honorable mention in 1928. We understand that they have established the amazing record of having operated since June 1, 1924 with no lost-time accidents, an accomplishment of which they may well be proud.

Third honorable mention is obtained by the Bloomville Limestone Quarry at Bloomville, Ohio, operated by The France Company. This plant completed the year with a total exposure of 111,698 man-hours. This is the second time a quarry operated by The France Stone Company has received honorable mention, the



*Quarry Employees, Marquette Cement Manufacturing Co., Cape Girardeau, Mo.*

previous occasion being in the contest for 1926 when their Monroe Quarry finished in second place.

The limestone quarry at Spencer, Indiana operated by the Mid-West Crushed Stone Company is awarded fourth honorable mention with a total exposure of 49,711 man-hours.

### Presentation of Awards

The winner of the contest is presented with the Explosives Engineer Award, a bronze plaque on which is portrayed in bas-relief the quarry scene from the pedestal of the Sentinels of Safety Trophy, which is the award for the National Safety Competition.

To each company receiving honorable mention there is presented a parchment reproduction of the bronze plaque awarded the winner. When any plant of a company wins the contest the company is credited with a leg on the trophy. Permanent possession of the trophy is given to the company when three legs have been obtained.

Presentation of the awards will take place at the Cape Girardeau plant of the Marquette Cement Manufacturing Company on Monday, August 19, at 7.00 P. M. W. F. Wise, President of the Association will make the presentation. It is expected that representatives will be present from all companies receiving honorable mention, from the United States Bureau of Mines and from the Explosives Engineer magazine.

To the five companies who will receive the awards for making perfect accident prevention records during 1928, we wish to extend our most hearty congratulations. They richly deserve the applause of the industry

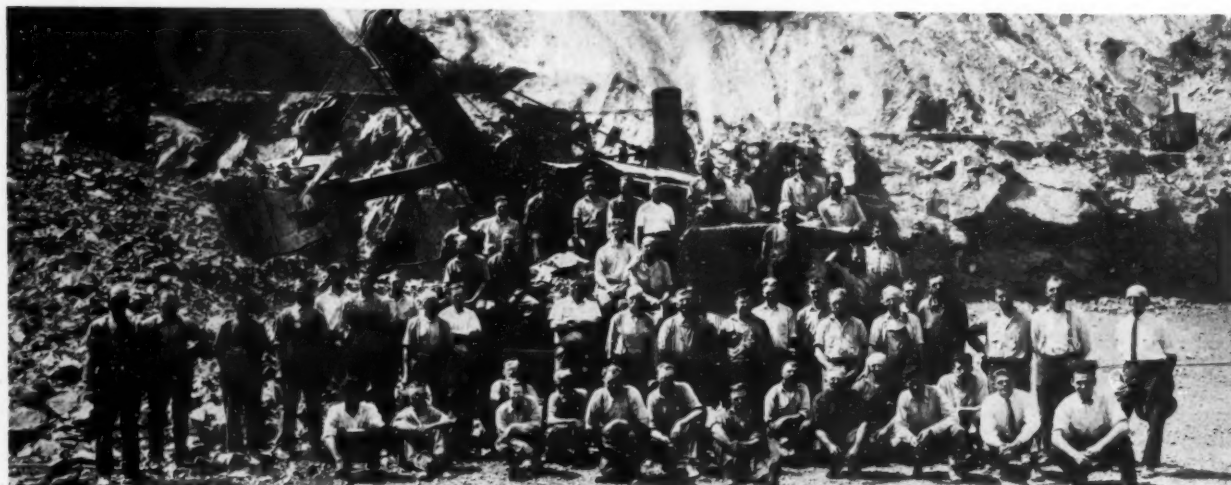
for the commendable achievement which they have accomplished in the field of accident prevention.

The presentation was held at the Cape Girardeau plant of the Marquette Cement Manufacturing Co., which was the winner of the trophy.

The ceremony took place at eight o'clock in the evening of August 19 and was held out of doors immediately in front of the crushing plant. Over one hundred of the employees of the plant and their guests were present.

H. O. Cole, plant manager, introduced the speakers who included A. U. Miller of the U. S. Bureau of Mines; W. F. Wise, President of the National Crushed Stone Association, who presented the awards; M. P. Greer, Safety Engineer, E. M. Gould, Quarry Superintendent, and Raymond Ford, Chief of Quarry Safety Police, all of the Cape Girardeau plant of the Marquette Cement Manufacturing Co.; L. R. Cartwright, Vice-President, Mid-West Crushed Stone Co.; E. M. Copeland, representative of the Explosives Engineer, John K. Walsh, Hercules Powder Co., and J. R. Boyd, Secretary of the National Crushed Stone Association.

Representatives of three of the quarries obtaining honorable mention were present to receive the awards given to those winning that distinction and included Harry Schwartz, Quarry Superintendent, Trap Rock Quarry, John T. Dyer Quarry Co., Birdsboro, Pa.; J. M. Buchheit, Superintendent, Brixment Mill and Quarries, Louisville Cement Co., Speed, Indiana; and L. R. Cartwright, Vice-President, Mid-West Crushed Stone Co., Indianapolis, Indiana.



Quarry Employees—Trap Rock Quarry, John T. Dyer Quarry Company



## Quarrying a Perfect Safety Record

By M. P. GREER,

*Safety Engineer, Marquette Cement Manufacturing Co., Cape Girardeau, Mo.*

**T**HE rapidly expanding quarry of the Marquette Cement Manufacturing Company at Cape Girardeau, Missouri, worked 212,921 man-hours during 1928 and produced over 500,000 tons of hard blue limestone which was used both in the manufacture of Portland cement and sold as commercial limestone.

A most pleasing reflection is the fact that during the year 1928 not one of the eighty odd employees suffered an accident of even a minor nature, thereby winning for themselves first place and the Explosives Engineer Award in the Safety Competition sponsored by the National Crushed Stone Association.

### Safety Campaign Started in 1924

The campaign against accidents at the Marquette Company's Cape Girardeau mill and quarry dates back to 1924 when the safety work was organized and a full-time safety man employed. A plant safety committee composed of one workman from each department is appointed by the foreman to serve a term of three months or for about nine or ten meetings which are held every Wednesday morning, at nine o'clock. The foremen of each department form a permanent foremen's safety committee which meets at nine o'clock on the first Wednesday of each month. This plan gives the quarry five representatives on the workmen's committee and five on the foremen's committee. These men represent first, the hydraulic stripping department which has as its duties the removal of from ten to fifty feet of clay overburden by means of very powerful streams of water; second, the quarry proper which includes the drilling, blasting, and loading of the stone with large electric shovels; third, the quarry railroad department which has charge of track building, maintenance and transportation of the stone with gasoline locomotive power; fourth, the crushing and screening department where the limestone is run through various crushers and screens until it is of the proper size; and fifth, the quarry shops which include blacksmithing, drill sharpening and quarry car and locomotive repairs.

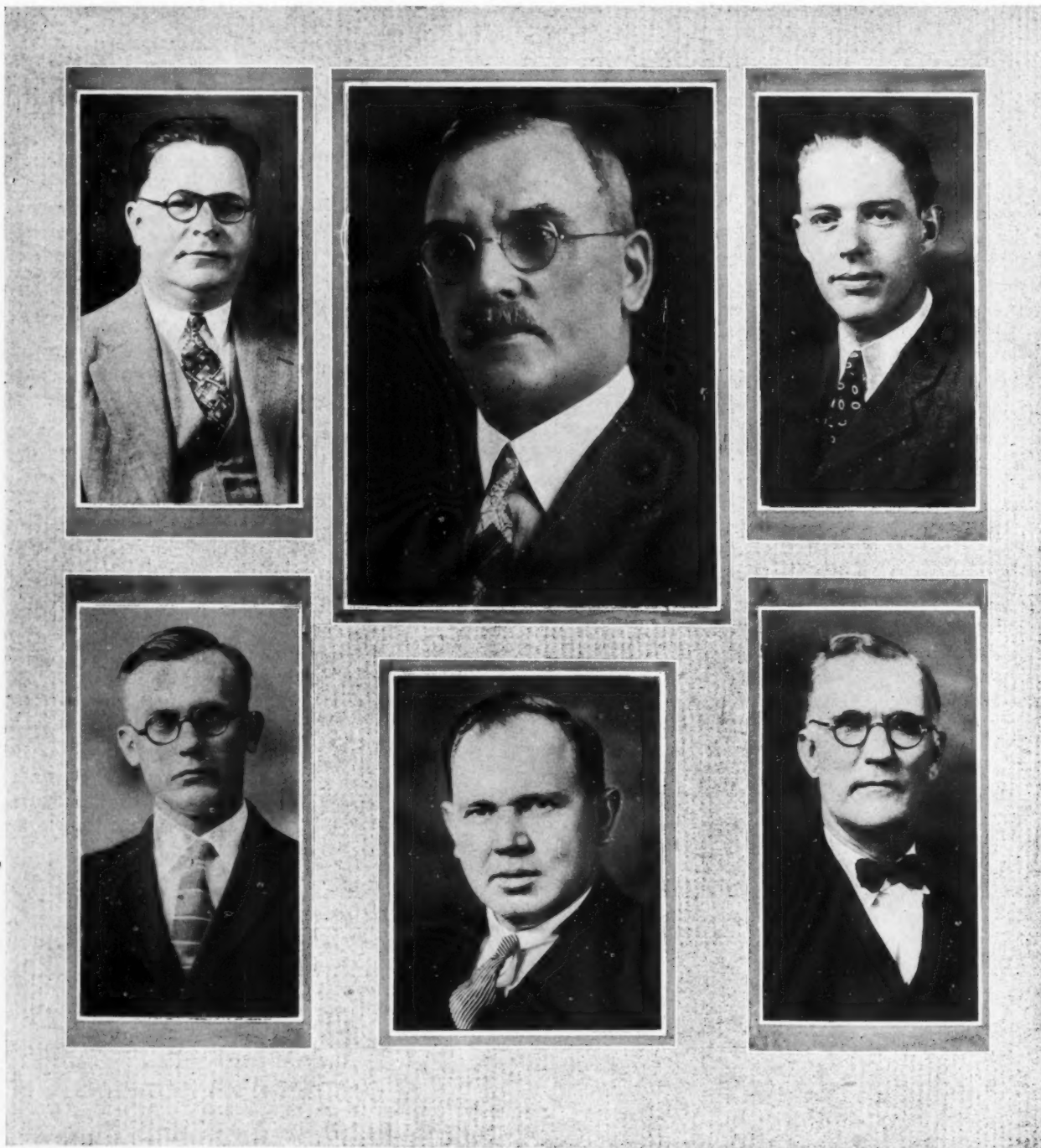
### Every Employee Serves on Safety Committee

Through the process of changing the committee every three months, practically every employee has

served at some time or other on the safety committee during the past five years. At these meetings the past records of our own quarry are studied very carefully and details of other quarry accidents as furnished by the Portland Cement Association are gone over minutely with the view of benefitting from the other fellows sad experience and also to decide if conditions in our quarry were such that similar accidents could occur there. All matters pertaining to safety are taken up with the committees including safeguarding of hazards, new work and equipment, new men, first-aid, the health and safe clothing of workers and many other things. By the time a man has completed his term on the committee he is well acquainted with the causes of accidents and how to prevent them. No workman wants to get hurt and it is our belief, if he is shown at the start and in the right manner the safe way to do his work, he will always do it that way.

### Safety Police Force Proves Most Effective

However, it is necessary to continually keep accident prevention before the employees and our safety committees worked out a plan that has been the most successful means of arousing and maintaining interest ever tried. This has been made possible through our Safety Police Force. A primary election is held every three months in our quarry to elect three candidates for the Chief of Safety Police. Interest is so keen that every employee votes and casts his ballot for the man he feels will make the best chief. The three men receiving the highest number of votes are the chief candidates and are given one week in which to make "stump" speeches to their fellow workmen and each one certainly tries to show why he should be elected chief over his two opponents. The ballots of the general election are counted by the safety committee to avoid any criticism and the man polling the most votes is the chief. First he is given a regulation police cap with the chief's badge thereon, then he is presented with an imitation "billy" and police whistle. His first duty is to pick his police force, with the help of the foremen. One man is appointed in each department and the chief pins a star on each officer. A meeting is then held and the chief tells his men just what their duties are. They are instructed to watch for



**Those Responsible for Accident Prevention,  
Marquette Cement Manufacturing Company's Limestone Quarry, Cape Girardeau, Mo.**  
Upper (left to right) H. O. Cole, Plant Manager; Richard Moyle, Sr., General Superintendent, La Salle and Cape Girardeau Plants; M. P. Greer, Safety Engineer, Lower (left to right) E. M. Gould, Quarry Superintendent; Raymond Ford, Chief of Quarry Safety Police; R. C. Matthews, Plant Superintendent.

infractions of safety rules, for carelessness, horseplay, dangerous practices and conditions or anything which might result in an accident. They are asked to set an example themselves and to warn others for all minor offenses. Arrests are made for second minor offenses and all serious offenses. Any workman or foreman can have any other person arrested, provided he has a just cause, by writing out a warrant and handing it to the chief. The chief then serves it on the man or men and they are summonsed to appear at the courtroom the following Wednesday morning for trial.

### Trial By Jury

The safety meeting room is used for the courtroom and the safety committee acts as the jury. The prisoner presents his own side of the case and any witnesses he may have and the court presents its, then the jury is given three minutes to decide whether or not he is guilty. If found not guilty he is released with a warning from the Superintendent, who acts as judge and the case is dismissed. But should he be found guilty, then the fun begins. He is required to draw his own fine from a box containing twenty or thirty different fines written out on cards. These fines are prepared with the view of creating further interest in safety and at the same time not to hurt anyones feelings and usually require the prisoner to do one of the following things: Make a talk on accident prevention before the safety committee; inspect his department thoroughly and report conditions found to his foreman; report every morning for a week to his foreman for an inspection of his clothing; report every morning for a week to the Superintendent and tell him how he feels physically; report for a complete physical examination by the plant doctor; write a short article on the safety work that has been done in his department; write or tell the safety committee about an accident he has read or heard of happening as a result of the act he was arrested for; help the safety man one day, and many others of similar nature too numerous to mention.

Then to let everyone know of the arrest and conviction we have a real "Rogue's Gallery" in the clockroom and every fine carries the added penalty of a picture in the gallery. One of our men who is quite a cartoonist makes up the pictures and they are usually the hardest looking "eggs" you ever saw. After a man has been arrested, gone through the trial before the jury, worked out his fine and taken a lot of loud and good natured kidding about his picture from his fellow work-

men, you can bet on it, he will be mighty careful that he doesn't go wrong again. We have a lot of fun out of this procedure but never is the serious side forgotten and the plan of the safety police which was started in 1927 continues to create more interest and improves within itself as time goes on.

### General Meetings Held Every Three Months

In addition to our safety committees and police force, an effort is made to enthuse the men by holding a mass safety meeting of the entire quarry force every three months. Safety bulletins are displayed and changed regularly in each department. Novel races are run placing each department in competition with the other and the big race is the entering of the quarry against some two hundred other quarries each year in the National Safety Competition sponsored by the U. S. Bureau of Mines and in the National Crushed Stone Association Safety Contest. Competition is a wonderful aid in accident prevention work and our men are always anxious to place their knowledge of how to work safely, against that of the employees of the other quarries scattered over the whole country.

### Stag Parties Help to Promote Friendship

Friendship must exist between all of the men and the foremen. To show that this feeling does exist our quarry employees all "chip in" several times during the summer months and a "stag" party is held for the entire quarry force. A cool spot along some good swimming stream is selected. Hamburger and weiner sandwiches and at times fish sandwiches, cooked by some of the quarrymen are provided for all. Soda pop flows freely and music is furnished by several "old timers" who have labored all day in the quarry. Songs are sung and everyone goes home feeling happy for having been there with the gang.

### Definite Progress Has Been Made

We all feel like we are on the right track after looking back to our 1924 quarry record and find that much less tonnage of stone was produced, considerably less hours were worked and also find that we had 22 lost-time accidents including two fatalities in our quarry during that year.

Everyone firmly believes that as long as we continue to have that competitive desire and that spirit of good-fellowship and co-operation, we will stay at the top and give other quarries a hard fight for the trophy year after year.



## How We Put Across Safety

BY J. M. BUCHHEIT,

*Supt. of Quarries, Louisville Cement Co., Speed, Indiana*

FOUR years and seven months without a lost time accident would indicate an accident prevention program in which most all safety men will be interested. The National Crushed Stone Association has asked me to explain how the good record is accomplished.

There is hardly anything along the line of Safety Promotion that has not been touched upon by better writers than myself. I can therefore only emphasize the importance of carrying out to the letter, well established rules and standards. It is being proven that the best records are obtained by adherence to tried methods and the only reason for not making a good record is traced to numberless alibies which at the present time are a very poor excuse for plant executives.

I shall classify these standards just as I have many times seen them classified.

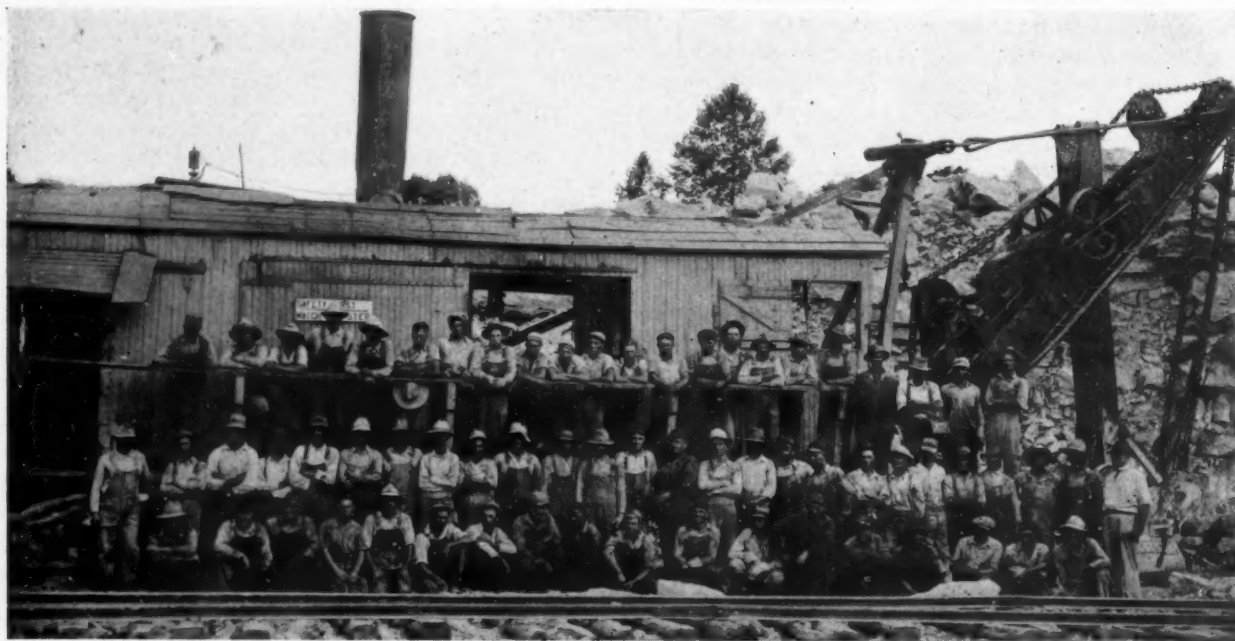
First, co-operation of plant executives with foremen and the men.

Second, educating the worker in accident prevention and educating foremen to provide safe working conditions.

Third, compelling men to work safely by holding foremen responsible for maintenance of safety.

The plant executives, particularly the superintendents, must be the first consideration. In some plants the word co-operation is just a fancy word meaning nothing in particular. An accident occurs and we hear the old familiar remark, "Too Bad," and nothing is done except extend sympathy in form of words or send flowers. If co-operation means anything, it should mean to the superintendent, an order from the plant executives requesting that he make good or throw up the job. To the foreman it means an order to finish the job without any expense to the company for time lost or damage claims. To the workman it means to make good with the boss and a bid for advancement.

The next in importance is making provision for training. The educational program is usually a pro-



*Quarrymen Louisville Cement Co., Speed, Indiana*



gram of lectures, quizzes and examinations to determine progress. The men that cannot make more than a passing grade should have special attention given them for a limited period of time and if it is found that a man is a hopeless case he should be given a limited time to look elsewhere for a job; we can't use him any longer.

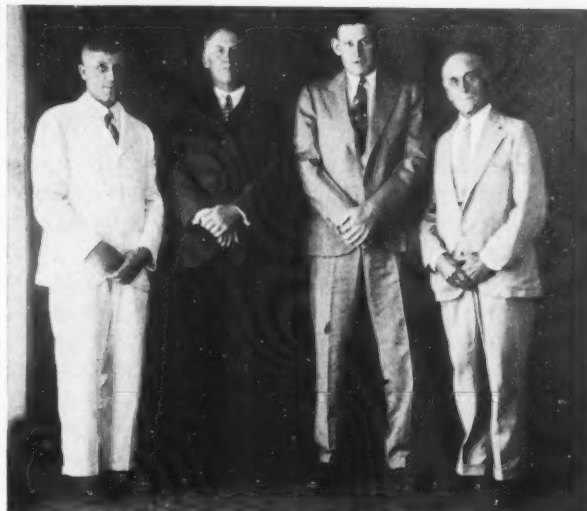
The third in importance is discipline. A code of rules should be established. There should be penalties for violation of rules, such as discharge, lay-off, and reprimand. There is entirely too much laxity in the enforcement of safety rules. The discharge penalty means *discharge*. It rarely has to be carried out for the reason that the men soon learn to regard this as a business measure. The men should be treated alike, no matter what the position held with the company. Show no partiality. If you do you will soon break down the morale and your disciplinary program will be blooey in a short time.

I believe if you will follow the program above outlined the men will soon learn to know that Accident Prevention is regarded as one of the chief things in your production program.



J. M. BUCHHEIT

Superintendent, Brizment Mill and Quarries, Louisville Cement Co., Speed, Indiana, winner of Second Honorable Mention



Safety Executives, Brizment Mill and Quarries, Louisville Cement Co., Speed, Indiana. Left to right—Charles Weibel, Safety Captain; Harry Regan, General Quarry Foreman; Harold Schoonover, Brizment Plant Engineer; Fred Enders, Safety Captain

### Attend the Annual Safety Congress

QUARRY Executives, Safety Engineers, Plant Superintendents and Operating Men, in fact, everyone interested in promoting accident prevention throughout the quarrying industry should by all means be present at the Eighteenth Annual Safety Congress to be held at Chicago, September 30 to October 4, 1929. Of particular value and interest should be the Quarry Section meetings and the Cement Section meetings. Both groups will hold simultaneous sessions on Tuesday and Wednesday mornings and a joint luncheon and meeting on Tuesday afternoon. On Wednesday afternoon arrangements have been made for an inspection of the plant of The Dolese and Shepard Company, featuring a demonstration of modern explosives and the electrically controlled mechanical hauling system in use at the plant. Special busses will be provided and the trip is certain to prove most interesting. The Program of the Quarry Section meetings is replete with interesting and informative talks regarding the latest developments in the field of accident prevention as applied to the quarrying industry. No one upon whom rests the responsibility for safe-guarding life and limb in quarry plants can afford to miss these meetings. Be sure to make your plans to attend immediately.

## Our Safety Work

By H. A. ROWAN,  
*Safety Engineer, John T. Dyer Quarry Co.*

**T**HE Trap Rock Quarry of the John T. Dyer Quarry Company, employing an average of 49 men, operated 166,768 man-hours during the year 1928 without a lost time accident. This record earned for them First Honorable Mention in the National Crushed Stone Association Safety Competition and also placed them seventh in the group of quarries and open pit mines entered in the National Safety Competition, sponsored by the Explosives Engineer and conducted by the U. S. Bureau of Mines. The efforts of the quarry to carry the record started in 1928 through 1929 so far have been successful and the men are at present both eager and confident that it will continue indefinitely.

The Trap Rock Quarry is one of three quarries operated by The John T. Dyer Quarry Company, all quarrying trap rock and being located within a radius of three miles of Birdsboro, Penna. Definite steps toward the formation of a safety organization were first taken in 1926, when a safety committee was appointed at each of the three plants. The safety committee at the Trap Rock Quarry is composed of eight men including the superintendent, assistant superintendent, clerk,

foreman and men in charge of various operations in and about the quarry. Meetings of the committee are held monthly. Two or three men outside of the safety committee attend each meeting and thus in the course of time each man at the plant will have been present at least at one meeting. A year ago a safety engineer was appointed by the company and he also attends each meeting.

The meetings consist of the reading and discussion of the inspector's reports and suggestions and discussions by the men of any changes or additions which might be made to improve the safety of conditions or machines about the plant. Before any contemplated plan is executed it is brought before the committee for discussion and it has been found that in this way changes have been made in the plans that have greatly improved their efficiency.

Early in 1928 the Company started a safety competition among the three plants, the one having the best record each year has its name inscribed on a bronze plaque. The competition will continue for five years and at the end of this time the one having its name on the trophy the most number of times will keep the trophy permanently. It is felt that this award has been a great incentive for better safety work. It will be noted that the first year the competition was in effect Trap Rock Quarry had a no-accident year, the first in their existence of 36 years. A marked improvement has also been noted in the accident records of the other two quarries.

At various intervals during the year safety inspections are made of the plants by engineers from outside sources. In this way, different improvements are made which have been overlooked by the employees due to their intimate familiarity with the works. It is believed that a man doing the same work day in and day out does not appreciate the particular hazards of his job as readily as one who is not so familiar with the work.

Trap Rock Quarry has started a record. This fact is, without doubt, the greatest incentive, at present, for maintaining its efforts to carry the record to greater lengths. The men now have safety always in their minds, they are always thinking of the record and this accounts for seventy-five per cent or more of the success they are having.



HARRY SCHWARTZ

Superintendent, Trap Rock Quarry, John T. Dyer Quarry Co., Birdsboro, Pa. In grateful appreciation of forty years continuous service, Mr. Schwartz was recently presented by the company with a beautiful watch suitably inscribed.

Mr. Harry Schwartz is superintendent at Trap Rock Quarry and Mr. Lewis Holstein, chairman of the safety committee.



*Safety Committee—Trap Rock Quarry, John T. Dyer Quarry Company*

## New Roads Show Increase for 1928

**D**URING 1928 the 48 States improved a total of 29,252 miles of highways, or 2,530 miles more than the 1927 total, according to figures compiled by the Bureau of Public Roads, and made public by the Department of Agriculture on August 24.

The 1928 total includes 8,675 miles of graded and drained roads and 20,577 miles of new surfacing. Of the roads surfaced 13,843 miles were previously unsurfaced and 3,587 miles were previously improved with a type of surface lower than the one newly applied. The remaining 3,147 miles were previously improved with the same type of surface, and the work done during the year is therefore classed as reconstruction.

### Texas Leads States

The total of 20,577 miles of surfacing placed is classified by types as follows: 1,200 miles of sand-clay and topsoil; 9,623 miles of gravel; 1,006 miles of water-bound macadam; 1,979 miles of bituminous macadam; 225 miles of sheet asphalt; 373 miles of bituminous concrete; 6,055 miles of Portland cement concrete; and 116 miles of brick and other block pavements.

Texas heads the States in the year's improvement with 2,356 miles. Kansas with 1,785 miles, ranks second; Arkansas, with 1,673, is third. Iowa improved 1,345 miles and Illinois, 1,344, ranking fourth and fifth, respectively. Minnesota, with 1,243 miles, is sixth; North Dakota, with 1,230, is seventh; New Mexico, with 1,052, is eighth; Kentucky, with 1,021, is ninth; and Ohio, with 928 miles is tenth.

## Increase Is Shown

The State systems at the end of 1928 had 306,442 miles of highways, according to figures given to the Bureau. Of this total, 193,138 miles were surfaced roads, 31,755 miles graded and drained, and 81,549 miles were unimproved and partly graded highways. This is an increase of 13,090 miles over the 1927 total figure. The surfaced mileage is made up of the following types of pavement: 13,499 miles of sand-clay and topsoil; 93,124 miles of gravel; 18,142 miles of water-bound macadam; 15,200 miles of bituminous macadam; 1,498 miles of sheet asphalt; 5,392 miles of bituminous concrete; 42,957 miles of Portland cement concrete; and 3,326 miles of brick and other block pavements.

During 1928, the States spent \$764,648,134 for State highway and bridge work under the supervision of the State highway departments, made up as follows: For construction and right of way, \$536,294,303; for maintenance, \$158,878,573; for equipment and machinery, \$20,505,483; for interest on outstanding bonds and notes, \$37,637,034, and for miscellaneous expense, \$11,332,741. The States also paid out \$27,016,499 in retirement of the principal of outstanding bonds and notes and transferred \$35,885,350 to county and town funds for local roads, making a total disbursement of \$827,549,983. At the end of 1928, there was an unexpended balance of available funds amounting to \$205,221,565 for all States.

## Finance Methods Given

For 1928, there was available to the 48 States for State highway and bridge work under supervision of State highway departments a total of \$1,035,486,474, made up of an unexpended balance of the previous year's funds of \$186,159,876 and a total income of \$849,326,598. Of the total income, motor vehicle fees of \$259,134,820 and gasoline tax receipts of \$234,163,826 allotted to State highways represent over 58 per cent. Sales of State bonds and notes issued for State highways of \$121,483,599 from more than 14 per cent of the total income, while Federal-aid fund allotments of \$80,798,365 represent more than 9½ per cent. Highway taxes levied in several States amounted to \$11,955,782, and appropriations by several States amounted to \$42,468,386. Miscellaneous incomes were reported as \$12,611,916 and funds transferred from local authorities as \$86,709,904.



# Even the Big Can't Stand Alone<sup>1</sup>

BY O. H. CHENEY,

Vice President, Irving Trust Company, New York

Cartoons by Rollin Kirby

WITH a new merger changing the economic skyline of America almost every day, the man in the street may get a little dizzy looking up, but he no longer "views with alarm." The big corporation belongs to the public. In fact, it was only through mergers, when small privately owned businesses were consolidated and stock sold to the public, that many corporations became publicly owned. The economic skyline is inspiring rather than terrifying to the man on the street because he owns the merger skyscrapers which stand on the sites of the shacks which he didn't own.

Nor is the man in the low building next to the skyscraper afraid. He is waiting to sell and become a newer and even higher skyscraper of industry. There is less grumbling among the "little" business men against big business than there was ten or fifteen years ago. When there is grumbling it is of a different tone—because the little man may be a big man tomorrow—at least, there's a hope.

This new era of mergers had to be. It is economic destiny that is making the big businesses of a previous era look like a row of peanut stands. Once mergers began in one industry, mergers had to begin in others. That, too, is economic destiny, because all industry is one in its complex

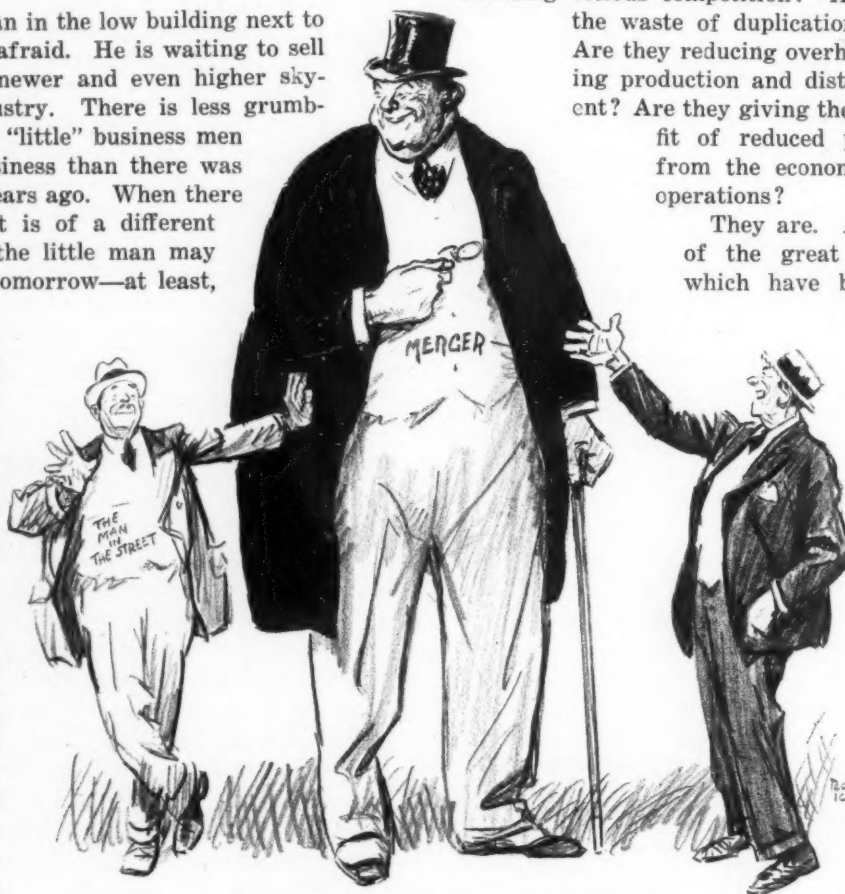
mutual dependence. The industries serving those in which the merger movement began had to have bigger units to serve the bigger buyers. Even the banks, with their natural and essential conservatism, had to merge so they could be big enough to serve big business.

American business cannot go back, and progress is lined with bigger and bigger structures. But this very inevitability makes care and foresight more necessary. If there is only one way to go, we must be sure that way is made as safe and comfortable as possible.

What are mergers doing for industry? Are they reducing vicious competition? Are they eliminating the waste of duplication and obsolescence? Are they reducing overhead? Are they making production and distribution more efficient? Are they giving the consumer the benefit of reduced prices which result from the economies of larger scale operations?

They are. At least this is true of the great majority of those which have been in effect long

enough to show such results. But are these benefits to American business and the American people inherent, automatic, in the merger? Can mergers assure these benefits? The answer to these questions is not in the affirmative. Logical as is the merger, its logic is dependent on the underlying premises of



The public no longer fears the big corporation

<sup>1</sup> This article, including all illustrations, is printed through the courtesy of Nation's Business in which magazine it appeared in the July, 1929, issue.



stability in the industry and sound competitive relations between the big units and the small ones. No merger in any industry can achieve its objects if the industry is disorganized or unstable or if the relations between the big units and their competitors are unsound.

The big corporation is not, of course, a new phenomenon; only the tremendous increase in their number and size in the present merger era has made the problem of the big corporation bigger and more vital to itself and to our economic life. We have had ample opportunity to study the big corporation of the past. A close investigation of 35 big corporations formed by mergers prior to 1903 shows that in only 13 did the average earnings in the following ten years exceed the previous aggregate earnings of the units which were combined.

There may have been a variety of reasons for this significant fact, and we have presumably learned much from experience, so that the young corporate giants of today will probably grow up to be a healthier and more effective lot.

### Business Becomes Civilized

If this prediction is realized, perhaps the most important factor will be that this is in many respects a better world in which to do business than it was in earlier days. It is true that competition is as fierce as it was then—perhaps it is fiercer because we are continually devising new weapons of economic warfare.

But at least some industries are beginning to learn that competition need not be expressed only in blind economic bloodshed. Businesses are learning to live

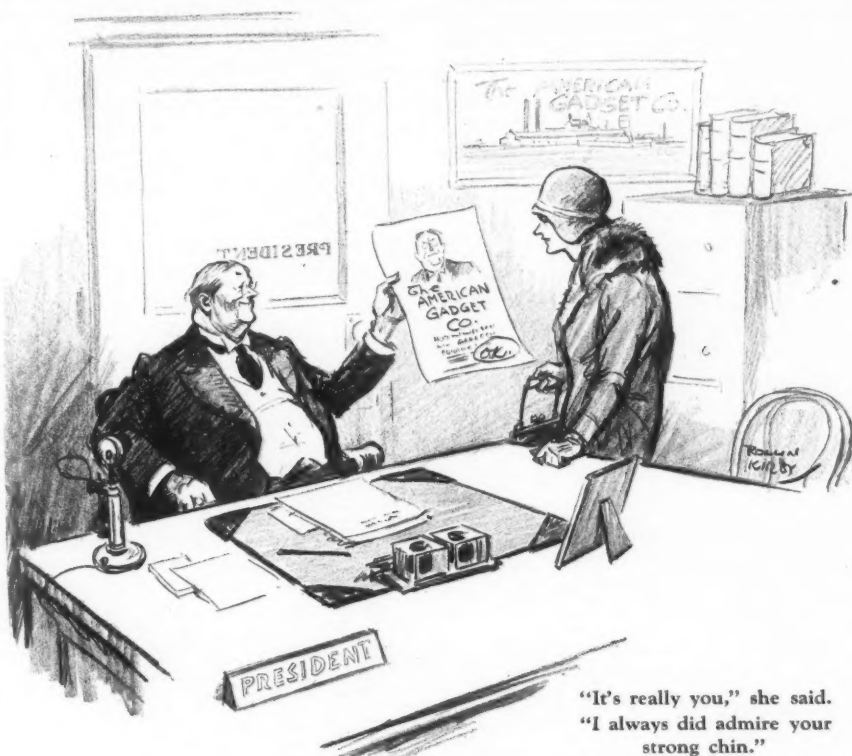
together and there is probably no industry in the country which has not the rudiments of organization with the potentialities of sane cooperation within competition. The trade association is only a means to an end; no trade organization is good merely because it exists. But in the trade organization business has found the most effective means so far devised for achieving stability and promoting the

prosperity of every business man by promoting the prosperity of the whole industry.

### Government No Help

Business as a whole is far from realizing in practice this obvious truth and, it must be admitted, the Government has not been helpful. That is why, even if President Hoover's other services could be forgotten, he will at least have made economic history by turning the American people and their representatives toward straighter thinking on cooperation in industry.

The relations between big and little business become more vital every day as the proportion of industrial volume controlled by big corporations increases. Therefore, there is a new significance in the participation of the big units in their trade associations, which is the fullest and most direct expression of these relations. There is a world of meaning in the fact that the trade organization men were among those who



believed first and most ardently that what their industries needed was mergers.

These men see things first. Whatever is happening in industry, whatever is happening in competition, gets to them clearly before it gets to anybody else. When industry is relatively peaceful, they feel its peace; when business descends to cutthroat warfare, they become the innocent bystanders who try to separate the combatants and get it in the neck from both sides. Trade association executives suffer from economic rheumatism—they can feel the rain in their bones before it gets cloudy.

Has the increasing size of corporate units been a good thing for business? Has it tended to reduce competition? Do the "big fellows" realize that their very size imposes obligations to their industry? Are they working for a more intelligent spirit in their industry? Are they better trade association members? Is this merger era the beginning of a new era of commercial peace, industrial efficiency and collective business progress?

These are the questions which I have been discreetly asking many clear-eyed and straight-spoken business

men. Their replies I have been carefully comparing with the views of trade association executives.

### Leaders Want Mergers

Many of these are the men from whom I heard the oft-repeated, "What this industry needs is a few good mergers." Most are satisfied that they are right. Certainly all but a few of the mergers in industry have worked out well so far. The big corporations have assumed their rightful places in their fields with dignity and decorum. They are cooperating with the other elements in the industry. They are supporting the trade associations. They are doing their share in cleaning up undesirable trade practices.

Among the men who have been most enthusiastic about mergers there are a few who claim to see enough exceptions to be disquieting. In some industries the difficulties have all the appearance of being real. Even in those industries in which the relations between the big and little fellows are at present amiable, the trade association executives are keeping their fingers crossed. What is going to happen when competition gets keener? How pleasant will these relations be should



Sometimes the big fellow on the business sand lot is a bully but everybody will have more fun if he plays the game with the little fellow

even a slight recession set in and business be harder to get?

Here is a composite picture of possible dangers taken from actual conditions in more than 30 widely different fields of business, including manufacturing, wholesaling and retailing. Perhaps it might better be considered a chart of reefs and shoals compiled by a number of good business pilots from their own observations. But whatever we call it, we must study it. We cannot afford to turn away because we cannot afford to tolerate anything remotely resembling a potential handicap to the success of the big corporations which have become so essential in our economic existence.

Take the Universal Consolidated Mothballs Corporation and American Gadgets, Inc., as a contrast. The former came into existence rather calmly. The prime movers in the merger had known each other for many years. They were pioneers in the mothball industry. They were getting on in years and some of their partners had passed on. They knew each other's business and they put together a logical combination based on real values. They stayed in the business. They remained active in their association as they had always been. They had the respect of everybody in the industry; even the newcomers liked them and accepted the industry's tradition of looking up to them.

Hadn't they fought for the industry from the very beginning, tariff fights, freight rate fights, prospecting for new sources of materials? Hadn't they thrown their best patents into the pool for cross-licensing? Hadn't they started the credit bureau and the statistical bureau? Hadn't they bought out poor Bill Gunzell at a good price when he was sick and his plant was going to the dogs, rather than let him crash and then buy him at auction? That's why, when one of the newer men tried any new-fangled deals with distributors, they had to say only a few words to him and he would see the light.

But American Gadgets, Inc., is different. It may be considered typical of the relatively few mergers which always appear during a merger era. It was made, not born. It was synthesized by a promoter and an investment banking house with an idea that "something might be done" in the gadget industry.

### A Synthetic Merger

They got a list of plants and wrangled a lot of free information out of the American Institute of Gadget

Blowers. They got options and were liberal to everybody in handing out stock. Those who "sold" have gotten out of business and some are starting new gadget plants in other parts of the country.

High-pressure sales and advertising executives are out to make the world painfully conscious of American Gadgets. The promoter and the investment banking house and a couple of others that had to be taken in for stock-selling help are heavily represented on the board of directors; the promoter is president. He is now head of a \$75,000,000 corporation and several dozen wise men of Wall Street are getting tips from his broker as to what he is buying.

With a proper feeling for his importance in the world of business, he is now "in conference" whenever the secretary of the Institute of Gadget Blowers calls—he has forgotten how, before the merger, he took the secretary out to lunch and bled him of all he knew about the industry.

Alone, he may not be very important. But he is important in so far as there may be a little of his attitude in any executive who is still very busy getting a newly merged corporation running smoothly.

Why should he bother belonging to the Institute? Doesn't he control 57.7 per cent of the gadget business? They can't stop him. It'll be 75 per cent within two years. He has the best advertising agency in the country and has just O.K.'d two page spreads in colors with his picture on them—the opening gun of a big million-dollar advertising campaign!

Good ads. They impressed his wife.

"It's really you," she said, "I always did admire your strong chin."

No, he is going to run his business efficiently and economically. Nobody can accuse him of throwing money away on such useless things as trade association dues. What would he get out of the \$10,000 spent like that? He has already accepted the resignations of several production men and a few sales managers who had been in the business 20 years and active in the Institute—just dead wood. What good is an association, anyway? He has cut out competition by combining seven competitors.

### Association Too Much Bother

Besides, he has no time for associations. A lot of annoying and unexpected little things keep coming up to bother him—he even had to cancel a golf date once. Of course, they are trivial matters which will clear themselves up, but they take up time in listening to



nervous managers and assistants and signing papers and things.

There was, for instance, that matter of freight rates—there was a big increase in the rates on bicarbonate of soda and chrome steel, the raw material of his gadgets, and there was a big freight increase on finished gadgets in less-than-car-load lots.

His sales manager piled his desk with a lot of reports from the men out on the road complaining of price cutting and "free deals," "inside terms" and exclusive distributor contracts by competitors, and how could they be expected even to remember all the different kinds of gadgets made by all the seven plants, let alone sell them? How could they be expected to make any sales at all with the country flooded with cheap imported gadgets from Jugo-Slavia and Burma?

### Revolutions in the Industry

The fool production manager showed him a memorandum from one of his young engineers who had heard a paper read at his technical society meeting which described a new patented method of making gadgets, resulting from research, which would cut costs by three-quarters and produce better gadgets. And there was an article somebody showed him in which some wild-eyed professor had declared that because of new developments in housing and transportation and the improvement of new synthetic materials, the whole gadget industry was doomed.

Oh, well, the American Gadget stock was up three points yesterday and his pool managers promised that they would have it at 75 by a week from Thursday.

Let us leave him while he's happy.

Some day within the next two years, perhaps, he will awaken to the fact that no corporation in the country is big enough, or can be big enough, to go it alone. This fact has nothing at all to do with the big corporation's "duty to the public" or "responsibility for the trusteeship of industry" or "noblesse oblige" or service. It is just selfish, material, hard-boiled common sense to cooperate with your competitors, because, no matter how big you are, what percentage of your industry you "control," the fate of your business is just as much in your competitors' hands as in your own.

Long before he discovers that he will probably realize that competition in his industry has become more bitter. This will surprise him as it is surprising men in a number of industries at this very moment, because isn't one object of mergers and consolidations to reduce competition? But just how can competition be

reduced when a group of companies doing a total of 40 per cent of the business of an industry are consolidated and immediately set a quota for the new corporation equal to 60 per cent of the business? Where will that other 20 per cent come from?

They are a strangely varied bunch of sandlotters, these men of American business. Each lot has a couple of big boys—and in a few of the lots the little fellows have discovered that they can have a better time somewhere else as soon as the big boys appear. In most lots, the big boys are just good scouts. In the few others they either won't play at all, or else they think the game is theirs.

After all, I suppose, it is only human nature for a big boy, once in a while, to act big boy. In nearly all cases, however, the big boy has learned that it is better to play with the crowd than to bully or sulk—that even the biggest brute may be mighty uncomfortable if the little fellows get together to annoy him.

Some big corporations have discovered that the small ones are no more worth bothering about than a monkey-wrench in the gears or sand in the lubricating oil. The very few unfortunate ones have learned that when an industry is on the toboggan the big boys on it make it go down so much faster.

Who is responsible for bad trade practices in any industry—for price cutting, for "skinning" on quality, for disguised "inside" deals, for misbranding, for unfair competitive tactics—the big fellow or the little fellow? This question is in the same field of speculative philosophy as the chicken-and-egg controversy.

Whether the big fellow starts it with hogging or the little fellow with sniping, the important fact is that every industry has this kind of competition.

Whether they like it or not, the little fellows are driven to it in desperation. They must do something to get business. No corporation, no matter how big, can be efficient or receive its full and just profit under such conditions. The big corporations have just as much to lose from vicious competition as the small ones.

That trade association is most successful and is doing the best work for its industry and for the nation in which the big members are paying their proper share of the budget and devoting the proper share of time and thought to its activities. In such associations the big members are real leaders—leaders, not bullies. They do not try to twist the work of the association to their own particular ends. They do not use the association for pulling their own special chestnuts out of the fire.



## More Intimate Knowledge of Limestone Needed

**A**PPROXIMATELY 24,000,000 tons of limestone are used annually in the United States chiefly in the smelting of iron ores in the blast furnace, according to the Bureau of Mines of the Department of Commerce, which states on May 17, as the result of a recent study, that enormous quantities of the rock are employed in modern metallurgy, particularly for fluxing. The full text of the statement follows:

Smaller amounts are used in basic open-hearth steel manufacture and in smelting lead, copper, and other non-ferrous ores. As limestone enters largely into metallurgical operations, an intimate knowledge not only of its utilization but also of its occurrence and qualities, and of the methods of mining and preparing it, is essential to the highest development of metallurgical practice.

Most limestone producers have little knowledge of the way in which their stone is used in metallurgy. The maximum content of silica, alumina, sulphur, and possibly magnesium and the minimum content of calcium carbonate may be arbitrarily fixed for the guidance of the producer; but aside from these requirements little information is available to producers on how their stone is used, the office it performs in smelting, or the effects of impurities. More complete knowledge of utilization would enable limestone operators to solve their production problems more intelligently.

### Knowledge Limited

On the other hand, the metallurgist's knowledge of conditions governing limestone production is usually limited. The literature of metallurgy is notably lacking in comprehensive discussions of fluxing or furnace stone. Approximately 900 pounds of limestone is used for every long ton of pig iron produced in the blast furnace; but this important constituent of the charge receives little attention compared with the intensive study of ores and fuels, the other important constituents of the charge.

Wider information on the origin and occurrence of limestone, on quarrying processes, and on methods of separation from impurities would undoubtedly be an advantage to the furnace operator. A lack of appreciation of modern production methods has in some instances led to decisions that worked a hardship on the fluxing-stone producer without any advantage to

the metallurgist. For instance, there is a deep-seated prejudice against limestone fines because in open-pit quarrying the sand and clay impurities are concentrated in the fines. Some stone producers who obtain their stone by underground methods have found great difficulty in convincing furnace operators that their fines are as pure as lump stone. With an intimate knowledge of limestone mining this would easily be understood.

The purpose of Bulletin 299, "Metallurgical Limestone," just issued by the Bureau of Mines, is to cover as completely as possible the present knowledge of the utilization of metallurgical stone and the problems connected with its quarrying or mining and preparation. With this object in view, it is believed that a clear coordination of all the factors involved may be worked out, and that mutual advantages will ensue to both producers and consumers.

### Utilization Problems Discussed

In Bulletin 299, the author, Oliver Bowles, mineral technologist, Bureau of Mines, discusses the utilization problems of metallurgical limestone in both ferrous and non-ferrous metallurgy. With regard to its use in the iron blast-furnace, attention is given to the purpose of flux, the action of flux in the furnace, the effects of impurities on fluxing stone, the slagging effect of magnesia, the effect of magnesia on slag viscosity and slag utilization and other matters. The use of limestone in the smelting of copper, lead and antimony is described. Production problems of fluxing limestone are given attention, and the magnesium problem is considered.

Usually the quarryman prefers a single market, all the details of which he thoroughly understands, for his product, says the author. A diversity of markets requires an additional sales force and a knowledge of the requirements of other consuming industries. However conditions may be such that a diversity of products is unavoidable. Stone unsuited for metallurgical use may be so interbedded that its removal becomes a necessity, in which case it is highly desirable that a market be found for it. The crushed-stone and rail-road ballast industries may constitute favorable outlets. At practically all fluxing-stone quarries there is a surplus of fines. With suitable grinding equip-

*(Continued on page 23)*

# The Crushed Stone Journal

Official Monthly Publication of the  
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WASHINGTON, D. C.

J. R. BOYD, Editor

Officers  
and  
Executive Committee



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## Five Perfect Safety Records

ELSEWHERE in this issue announcement is made of the results of the National Crushed Stone Association Safety Competition for 1928 in which it is shown that five member companies completed the year with no lost time accidents. How such records were established should be of interest to everyone and we are particularly fortunate in being able to publish in this issue articles descriptive of the measures employed by some of the plants making perfect records. We earnestly recommend that you give to these articles a careful reading. You will be more than repaid for the small amount of time required.

ANNOUNCEMENT was made in the July issue of the *Journal* of a series of tests being conducted by the U. S. Bureau of Public Roads at its experimental laboratory at Arlington, Virginia, which will de-

termine the effect of variations in the amount of coarse aggregate on the quality of Portland cement concrete.

Additional details regarding this investigation have been given in an article appearing in the August issue of *Public Roads* which should be of interest and is quoted as follows:

It is desirable to investigate the matter by using standard construction equipment for making and finishing full-size test slabs laid under closely controlled conditions.

A single commercial concrete sand of good quality is being used as the fine aggregate in all of the slabs. The following variables have been included in the tests.

(a) Coarse aggregate of three types:

1. Crushed stone.
2. Rounded, uncrushed gravel.
3. Blast furnace slag. To be used with coarse aggregate grading No. 1 only.

(b) Coarse aggregate of two gradings.

1. Material graded from one-fourth inch to 2½ inches and containing a proper amount of one-fourth to three-fourths inch material.
2. In the second grading the crushed stone will be deficient in one-fourth to three-fourths inch material, but the gravel will carry an excess of this size and will be limited to a maximum size of 1½ inches.

The coarse aggregates will be measured in three commercial sizes, as follows: 2½ inches to 1¼ inches, 1¼ inches to three-fourths inch, and three-fourths to one-fourth inch.

(c) Six proportions (dry, rodded volumes) as follows:

- |            |            |
|------------|------------|
| 1. 1:2:3½. | 4. 1:2:4¾. |
| 2. 1:2:4.  | 5. 1:2:5.  |
| 3. 1:2:4½. | 6. 1:2:5¼. |

The addition of coarse aggregate will proceed only to the limit of workability for each aggregate. It is not expected that it will be feasible to use as much crushed stone or slag as gravel.

(d) Three consistencies are being used ranging from the driest which can be placed and finished to a relatively wet mix which can be handled easily.

(e) Two finishing machines are being used.

The pavement slabs are 9 feet square and 7 inches thick and are placed with the use of steel side forms. Mixing, placing and finishing of the concrete is in accordance with modern paving practice using standard equipment.

The slabs are divided longitudinally by dummy joints or planes of weakness and the various sections are separated by transverse headers. The mixing time is one minute. The slabs are covered with wet burlap for 24 hours, followed by wet earth for 10 days. Detailed observations are being made as to consistency, workability and yield.

After curing the slabs are to be drilled for cores and subdivided into beams suitable for flexure tests. The strength tests will be made at an age which will be determined later.

Supplementary tests are also to be made on beams and cylinders cast at the time the pavement slab is placed. These tests should yield data as to the relationship between the strength of molded specimens and that of specimens cut from pavement slabs.

## Joint Committee Makes Recommendations on Cleaning and Repairing Cars

SINCE the announcement in the June issue of the *Journal* that an informal conference had been held between representatives of the three aggregate associations and the American Railway Association with the idea in mind of bringing about, through mutual co-operation, a decrease in the burden of expense now placed upon shippers of mineral aggregates due to the expense incurred by the shippers in cleaning and repairing cars, very definite and satisfactory progress has been made towards this end.

Results of the surveys recently conducted by the National Crushed Stone Association, the National Sand and Gravel Association and the National Slag Association have been presented to M. J. Gormley and W. J. McGarry of the American Railway Association accompanied by the definite recommendations of the joint committee of the three aggregate associations. These recommendations were made in the form of a letter addressed to the Association and signed by F. T. Gucker for the National Crushed Stone Association, J. C. Buckbee for the National Sand and Gravel Association and L. E. McDermut for the National Slag Association, the full text of which is as follows:

American Railway Association,  
Washington, D. C.  
Gentlemen:

The sand and gravel, crushed stone, and crushed slag industries are suffering from a heavy expense due to the necessity for cleaning and repairing open top cars delivered to them by the carriers for loading.

A careful survey of the situation has been made by the national associations of each of these industries in order to determine the cost of the burden and to secure data which may be used in improving the situation in the interests of both the carrier and the shipper. We are attaching hereto copies of the surveys made by each of the associations.

It will be observed from the survey of the National Sand and Gravel Association that a total of 89 producers furnished information concerning the cost which they incurred in cleaning and repairing cars for loading. Approximately 450,000 cars are included in this survey. The average cost of cleaning and repairing a car is shown to be 46.5 cents.

The National Crushed Stone Association survey covers the experience of 77 plants, with a total loading of approximately 300 000 cars in 1927. The average cost in this industry for cleaning and repairing railroad cars is shown to be 26.7 cents.

The National Slag Association report covers the experience of six plants shipping approximately 100,000 cars. The average cost of cleaning and repairing cars in the slag industry is shown to be 38.4 cents.

The surveys conducted by the associations have covered the United States irrespective of membership in these organizations. It affords, therefore, a cross-section of the experience of the three industries throughout the country and, we believe, shows quite accurately the conditions as they exist. As might well be expected, errors have been made by some of the companies in calculating the average cost in cleaning and repairing cars. We have, accordingly, compiled the average figures given above by considering only total figures for given sized groups or the survey as a whole.

The sand and gravel, crushed stone, and slag industries in 1927, the year covered by the surveys, shipped approximately 2,300,000 cars, so that it is evident in the light of figures given above that the cleaning and repairing of cars placed for shipment cost these industries approximately one million dollars.

The necessity of cleaning cars placed at our plants for loading arises from the neglect of the last consignee to remove the contents of the car he received. Obviously his carelessness should not result in imposing a burden either upon the carrier or the shipper that next receives the car for loading.

The railroad company in the first instance delivered a clean car to the first shipper, as the car was new. The first consignee and all that followed his should, in justice to the railroad company as well as in justice to the next shipper, return the car in clean condition ready for the next loading.

So far as we know, there is no order of the Interstate Commerce Commission which stipulates that a consignee must clean a car thoroughly before returning the car to the carrier. We feel that such an order should be issued. We further feel that where the provisions of the order are neglected the carrier should refuse to accept the return of the car and should be empowered to apply demurrage charges until the consignee cleans the car.

Our surveys have developed some interesting data concerning the types of railroad cars required by the trade. We believe that this information will be of interest to the American Railway Association in a determination of the proper type of equipment to be assigned for the loading of our materials.

It is indicated in the survey of the National Sand and Gravel Association that the drop-bottom type of gondola car is the most expensive car to clean and repair and it is also the car which suffers most in service. It will be observed from the survey of this Association that approximately 50 per cent of their shipments are unloaded by clamshell buckets; the survey of the National Crushed Stone Association indicates that approximately 31 per cent of their shipments are unloaded by clamshell buckets; and the survey of the National Slag Association brings out that approximately 15 per cent of their shipments are unloaded by clamshell buckets. When clamshell buckets are used for unloading, the solid-bottom type of gondola car is best adapted to the service, as the heavy solid bottom resists the impact of the buckets in a more effective manner than in the case of drop-bottom cars.

Where trestles are provided for unloading, or there are hoppers below the track, the hopper type of car is the more desirable car, as such cars are, in practically all instances, 100



per cent self-cleaning. The drop-bottom car is rarely, if ever, thoroughly self-cleaning.

It appears from the National Sand and Gravel Association survey that only 13 per cent of their tonnage is demanded in drop-bottom cars. From the Survey of the National Crushed Stone Association it appears that only approximately 25 per cent of their tonnage is demanded in drop-bottom cars, while from the survey of the National Slag Association it is evident that less than 1 per cent of their shipments is demanded in drop-bottom cars.

It would seem to be definitely established by these data that the drop-bottom type of car is not used as extensively in our industries as the other types of equipment. The surveys of the National Sand and Gravel Association and the National Slag Association lend themselves quite definitely to the suggestion that few of such type of cars should be added by the carriers in the future for the transportation of these materials. We would also venture the suggestion that the older and weaker types of drop-bottom cars now in service, might, with good results to both carrier and shipper, be converted into solid-bottom cars when next in the repair shops.

As we anticipated, our surveys show that the cost of cleaning and repairing cars is greater to the small producer than it is to the larger producer. For the purpose of convenient reference, we have divided the producers into several groups according to the size of their production, showing the individual cost to each group as set forth below:

#### SAND AND GRAVEL INDUSTRY

Groups	Number of Cars	Cost of Cleaning and Repairing	Average Cost per Car
1 to 2000 cars	30,173	\$27,454.95	91.0 cents
2001 to 5000 cars	120,901	64,492.00	53.3 cents
5001 to 10000 cars	113,820	52,783.33	46.4 cents
10001 to 20000 cars	63,928	30,785.65	48.2 cents
20001 and over	120,278	33,323.29	27.7 cents
	449,100	\$208,839.22	46.5 cents

#### SLAG INDUSTRY

1 to 2000 cars	.....	.....	.....
2001 to 5000 cars	2,138	\$1,067.50	49.9 cents
5001 to 10000 cars	8,341	2,070.00	24.8 cents
10001 to 20000 cars	49,455	20,050.00	40.5 cents
20001 and over	37,560	14,250.00	37.9 cents
	97,494	\$37,437.50	38.4 cents

#### CRUSHED STONE INDUSTRY

1 to 2000 cars	30,732	\$15,747.78	51.2 cents
2001 to 5000 cars	62,126	20,531.80	33.0 cents
5001 to 10000 cars	37,130	5,500.00	14.8 cents
10001 to 20000 cars	90,958	22,676.24	24.9 cents
20001 and over	28,500	2,100.00	7.4 cents
	249,446	\$66,555.82	26.7 cents

The detailed reports included in the surveys are on file at the offices of the respective associations, and we shall be glad

to furnish the American Railway Association with any further information which it may desire.

It is impossible to obtain data which segregates the average cost of cleaning cars from the average cost of repairing cars. Yet we know from the many complaints we have received from producers that a great many cars placed for loading by the carriers are not in proper condition for loading due to holes in decks and sides, to poorly fitting doors, and other defects in the cars.

It is undoubtedly the duty of the carrier to furnish the shipper with a car which will transport the commodity safely to its destination, but we appreciate that at the peak of the season when the carriers have demands for great numbers of cars that they can not always furnish cars which are in perfect condition. On the other hand, it is our opinion that greater care should be exercised in the repairing of cars which are to be used in transporting our materials and that great improvement can be made in this direction with a consequent saving to the shipper in the cost of repairing cars and to the railway in reducing claims for materials lost in transit. The feature of safety of operation should not be overlooked in this connection, since leaking cars have been known to derail trains.

We realize that this general question of cleaning and repairing railroad cars is one which is not new. Undoubtedly, many of the Regional Advisory Boards throughout the country have given consideration to the problem and have undertaken to institute measures which would bring relief to the shippers in the territories covered by such Boards. The industries represented by our associations have been burdened with a heavy expense for several years in placing cars in proper condition to transport their products, and field investigations have disclosed that in many parts of the country the situation is becoming worse rather than better. Our products are sold on a small margin of profit and any additional expense incidental to the cost of production and distribution exerts a more pronounced effect upon our industries than in the case of other industries with products of a higher unit value.

Accordingly, after representations from our membership, joint committees were appointed to endeavor to bring some measure of relief to our producers, and we hope that through cooperation with the American Railway Association, a definite improvement in the condition of cars can be effected in the near future. We view the problem as being of mutual interest to our industries and to the railroads, and our surveys have been conducted impartially in order to develop as much information as possible. This having been done, we submit our reports to you for consideration. We believe that a cooperative program should be adopted in which the carriers and our shippers can participate to the advantage of all parties concerned, and we take this opportunity of pledging our cooperation in the carrying out of any program which is decided upon along these lines.

The railroads through their Association have pledged their full cooperation. It is our understanding that complete copies of the reports and recommendations will be brought to the attention of all regional advisory boards and that representatives of the railroads will be instructed to confer with the crushed stone, sand and gravel and slag committees of

the boards to the end that a program of action may be formulated which will materially reduce the burden of expense now imposed on shippers of aggregate for cleaning and repairing cars. Also the transportation departments of the more important railroads of the country will receive a copy of the report.

After the regional advisory boards and the railroads have been fully informed as outlined above, it is expected that a definite procedure will be decided upon which will afford relief from this trying situation.

It is not to be expected that a solution will be forthcoming immediately but certainly the prospects for an early one should be viewed optimistically.

### Something of a Monopoly

A MERCHANT in a small western town bought a good sized bill of goods from a New York wholesale firm by mail, and when the goods arrived, turned them down for what seemed to the shipper to be entirely insufficient reasons, so they insisted that he keep them.

Since his credit rating was satisfactory, they got busy trying to force him to pay for the goods, but they got no response to any of their efforts. So they made a sight draft on the merchant, sending it through the one local bank in the merchant's town. It was returned.

They wrote the postmaster in the small town asking about the moral and financial reputation of the merchant, and he replied that the merchant was O. K. in every way.

So they wrote the postmaster and asked him to recommend a local attorney to handle their case and make the collection, whereupon the merchant wrote them as follows:

"Gentlemen: I am the merchant to whom you sold those bum goods, and who refused and refuses to pay for them. I am also owner of the bank through which you made your draft. Likewise, I am the postmaster to whom you wrote to procure a lawyer to make this collection. I am also the only lawyer in this town, and if I were not the local preacher also, I would tell you a lot of things about yourselves that my cloth forbids me to utter."—*Arkansas Highways*.

### Prodding the Slow Pokes

ON the Miami Viaduct at Miami, Florida, are many signs proclaiming: "You must go 35 miles per hour over this viaduct," and the driver who disobeys the rule is handed a ticket by one of the motorcycle officers standing ready to dispense such hospitality.

On the new five-mile bridge near Newport News, Va., a minimum speed of 35 miles an hour is required.

Michigan's marked reduction of automobile accidents in 1928 is ascribed by experts to the fact that its state traffic code abolished all speed limits and provided only that cars should be driven in a way to insure safety under the circumstances.

In motoring, as in all phases of life, there are times when the slow poke inexcusably slows down everybody around him.—*American Motorist*.

### Committee to Study Traffic Congestion

A COMPREHENSIVE study of methods designed to meet traffic congestion throughout the United States, both in the cities and the highways, will be undertaken immediately by a Committee on the Relief of Traffic Congestion appointed September 19 by the Secretary of Commerce, Robert P. Lamont.

The committee, composed of State and municipal officers, representatives of real estate groups, street railways, steam railroads, rail terminals, motor vehicle users, dealers and manufacturers, building contractors, retail merchants, taxicab operators, city planning commissions and traffic engineers, it was stated, will hold its first meeting in Washington, October 10.

### Convention Calendar

Eighth Annual Asphalt Paving Conference, West Baden Springs, Indiana, October 28 to November 1, 1929.

Annual Convention and Road Show of the American Road Builders' Association, Atlantic City, January 11 to 17, 1930.

Thirteenth Annual Convention and Manufacturers' Division Exposition of the National Crushed Stone Association, Hotel Gibson, Cincinnati, January 20 to 23, 1930.

Fourteenth Annual Convention and Manufacturers' Division Exposition of the National Sand and Gravel Association, Peabody Hotel, Memphis, January 28 to 30, 1930.

Annual Meeting of the American Concrete Institute, Roosevelt Hotel, New Orleans, February 11 to 13, 1930.

## Crushed Stone Production for 1928 Shows Decrease

**P**RODUCTION of stone in the United States in 1928, exclusive of stone manufactured into lime, cement, and abrasive materials, or crushed into sand, amounted to 133,869,510 short tons, valued at \$196,820,697, according to a compilation of reports from producers made by the United States Bureau of Mines, Department of Commerce. The figures show a decrease of 2 per cent from the 1927 production figure of 136,345,130 short tons.

Stone sold for flagging, rubble, furnace flux, manufacturing industries, and miscellaneous uses increased in quantity and stone sold for construction, monumental stone, paving blocks, curbing, crushed stone, riprap, agricultural limestone, and refractory decreased.

### Street and Road Work and Concrete

Street and road metal in general showed decreased sales in 1928. Paving blocks (35,426,860 blocks, valued at \$3,113,526) decreased 8 per cent in quantity. Stone sold for flagstones (932,900 cubic feet, valued at \$717,049) increased 26 per cent. Stone sold for curbing (4,832,160 cubic feet, valued at \$4,698,313) decreased slightly. Total crushed stone amounted to 91,265,360 short tons, valued at \$94,186,259 in 1928, a decrease of 4 per cent in quantity. Crushed stone for concrete and road work (74,384,490 tons, valued at \$81,041,349) decreased 5 per cent in quantity, and crushed stone reported as used for railroad ballast (16,880,870 tons, valued at \$13,144,910) increased 3 per cent.

### Fluxing Stone

Stone sold for fluxing to blast furnaces, open hearth steel works, smelters, and other metallurgical plants, amounted to 23,123,870 short tons, valued at \$16,957,264, an increase of 7 per cent in quantity.

Sales in 1928 of pulverized limestone for agricultural use amounted to 2,186,870 tons, valued at \$3,153,848, a decrease of less than 1 per cent in quantity from the sales for 1927.

The accompanying tables show the sales of stone in 1928 by kinds and by uses and the corresponding sales for 1927 for comparison.

Stone sold or used by producers in the United States, 1927 and 1928 by kinds

Kinds	1927		1928	
	Short tons (approximate)	Value	Short tons (approximate)	Value
Granite .....	10,706,740	\$35,287,306	9,556,506	\$33,994,527
Basalt .....	13,210,570	17,399,949	15,327,760	19,693,945
Marble .....	600,060	15,625,872	579,490	16,402,986
Limestone .....	99,662,270	112,439,824	96,864,650	110,231,974
Sandstone .....	5,050,600	10,923,035	4,716,530	10,498,440
Other stone .....	7,114,890	6,971,336	6,824,580	5,998,825
Total .....	136,345,130	198,647,222	133,869,510	196,820,697

Stone sold or used by producers in the United States, 1927 and 1928, by uses

USE	1927		1928	
	Quantity	Value	Quantity	Value
Building stone .....	32,104,200 cu. ft.	\$40,595,127	30,795,530	\$42,769,904
Short tons—approximate...	2,485,120		2,433,330	
Monumental stone .....	4,323,300 cu. ft.	14,978,691	4,205,780	14,966,498
Short tons—approximate...	358,000		347,760	
Paving blocks .....	38,705,560 number	3,583,400	35,426,860	3,113,526
Short tons—approximate...	366,740		349,290	
Curbing .....	4,862,580 cu. ft.	4,939,716	4,832,160	4,698,313
Short tons—approximate...	378,230		383,070	
Flagging .....	737,680 cu. ft.	573,736	932,900	717,049
Short tons—approximate...	55,160		74,900	
Rubble .....	899,920 short tons	998,108	907,890	1,249,703
Riprap .....	4,618,500 short tons	4,216,731	3,993,190	3,865,895
Crushed stone .....	94,948,770 short tons	97,474,267	91,265,360	94,186,259
Furnace flux (limestone and marble) .....	21,666,070 short tons	15,985,525	23,123,870	16,957,264
Refractory stone (ganister, mica schist, and dolomite) .....	1,362,920 short tons	1,710,708	1,348,160	1,745,066
Agricultural limestone .....	2,206,470 short tons	3,360,704	2,186,870	3,153,848
Manufacturing industries (limestone and marble) .....	5,352,130 short tons	4,735,114	5,639,750	4,723,810
Other uses .....	1,738,000 short tons	4,995,395	1,796,070	4,673,562
Total (quantities approximate in short tons) .....	136,345,130	198,647,222	133,869,510	196,820,697

### Foreign Road Expenditures

**H**IGHWAY construction statistics in foreign countries show Great Britain to be the leading builder of roads with expenditures of \$250,000,000 in 1927, according to information compiled and made public September 13 by the automotive division of the Department of Commerce. This compares with expenditures of \$1,065,972,558 by the United States in the same year.

Following Great Britain is Germany which spent \$143,000,000; Italy, \$52,000,000; Canada, \$45,754,284; Chile, \$35,000,000, and British India, \$29,235,728. No information could be obtained from Japan, the division explained, since that country considers such data a military secret.

The new Cuban central highway, which the division considers the outstanding piece of road construction in the world at the present time, is more than half completed. This road, which will extend 702 miles from Pinar del Rio, on the southwestern part of the



island, to Santiago de Cuba, in the southeastern corner, is to be completed June 30, 1930, at a cost of approximately \$76,000,000.

The road is being built of granite blocks on a cement concrete base for the greater portion of the route and bituminous concrete on cement concrete on the remaining portion. All grade crossings will be replaced by upper or lower level crossings, it was stated.

#### More Intimate Knowledge of Limestone Needed

(Continued from page 17)

ment the fines may be prepared for the agricultural limestone market or for the filler trades. Coarser materials may be sold as chicken grit or as limestone sand in localities where silica sand is not abundant.

Metallurgical limestone is itself a by-product at many limestone quarries. Thus, in the Toledo district of Ohio many thousands of tons of dolomite too small in size for calcining to lime in shaft kilns are sold to metallurgical plants for furnace lining.

Copies of Bureau of Mines Bulletin 299, "Metallurgical Limestone," may be obtained from the Superintendent of documents, Government Printing Office, Washington, D. C., at a price of 10 cents.



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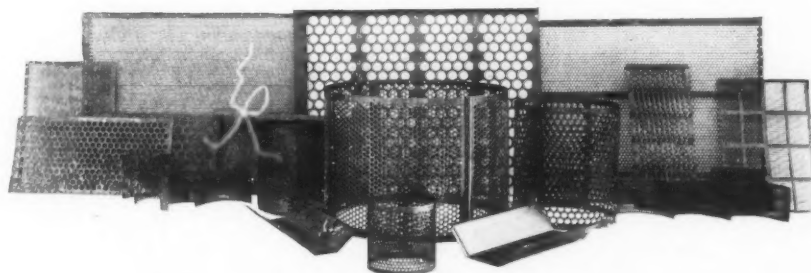
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